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ABSTRACT

In an effort to evaluate the academic persistence and performance of all 271 fall 1989 first-time college students and first-time transfer students at Mendocino College (MC), the students' academic histories were analyzed for 4 sequential semesters from fall 1989 through spring 1991. In addition, students who persisted were compared with students who withdrew to identify characteristics that might be associated with high academic risk at entry. Study findings included the following: (1) over 4 semesters, 37.64% of the study sample remained in active enrollment, while 6.7% attained degrees or certificates; (2) attrition occurred early in the students' college careers, with 40 of the students who withdrew showing "zero attempted units" during their first semester and an additional 53 not continuing into the second semester; (3) the majority of students enrolled part time during each of the 4 semesters, taking an average of less than 9 units each semester; (4) just over one-third of all students were on academic probation at the end of each semester, while a slightly larger number were in the 3.00 to 4.00 grade point average range; (5) overall, about 70% of the students continued to make satisfactory academic progress each semester; (6) women tended to persist in greater percentages than males; (7) no significant differences were found in persistence patterns for different racial and ethnic groups; and (8) participation in the orientation class was most positively correlated with persistence, while poor performance on the math basic skills test was most negatively correlated. Detailed data tables and a discussion of the statistical model used in the predictive analysis are included. (PAA)

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MENDOCINO COLLEGE

RESEARCH REPORT 91-5

A FOUR-SEMESTER FOLLOW-UP
OF FALL, 1989 MATRICULANTS

JUNE, 1991

Thomas F. MacMillan, Ed.D.

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A Four Semester Follow-Up of Fall, 1989 Matriculants

Background:

One objective of the Matriculation Program both statewide and locally is to encourage persistence and performance of entering Community College students by providing the necessary academic advising, support services, and other interventions that have been shown to be effective with special populations such as EOPS students. As defined in Fall, 1989 at Mendocino College, a Matriculant was a first-time or first-time transfer student enrolled for at least nine (9) units of academic credit in a program leading to one of five (5) stated academic goals. Previous research has described the progress of this initial group of Matriculants through the initial academic semester.

The purpose of this Research Report is to analyze four (4) semesters of persistence and performance for the Fall 1989 Matriculants by analyzing their academic histories in sequential semesters from Fall 1989 through Spring 1991. In addition, contrasts between Persisters and Withdrawals will be made in an effort to identify characteristics that might be associated with high academic risk at entry. Although 16 students among the Matriculants attained degrees or certificates from Mendocino College within the four-semester period of follow-up, the fact is that many students report taking 5 or more semesters to complete a goal; further research will continue to observe future goal attainment. Data were not available to indicate how many of those who left Mendocino College enrolled in a Transfer institution, whether Community College or University.

Findings:

Table 1 summarizes the pattern of persistence and overall performance for 271 Matriculants entering Mendocino College in Fall, 1989. Over four (4) semesters, 37.64% of the group remained in active enrollment, at least at the beginning of the Spring, 1991 semester. A total of 88 of the original 271 were active at the conclusion of the fourth semester of attendance (32.47%). According to the data of Table 1, attrition occurred early in the college career. In fact, as previous research has indicated, 40 of the withdrawals (14.7% of the total sample) showed Zero Attempted Units (ZAUS) for their very first semester of enrollment, and an additional 53 did not continue into the second semester of college work. Very few (less than 5% overall) showed an intermittent pattern of attendance over the four-semester period: the decision to discontinue enrollment, once made, appears to be lasting for Matriculating students.

During the second year, 108 of the original group returned, and within the year only 6 additional students withdrew between Fall and Spring semester. The data suggest that those students who do return for a second year are very likely to complete it, remaining for the full four semesters.

Each semester, between 10% and 15% of the students withdrew prior to the penalty grading period, showing ZAUS status for the semester. Some of these students may have received only CREDIT grades, for which Attempted Units are not shown on the transcript record. The last line of Table 1 represents the most accurate picture of the four-semester attainments of Fall, 1989 Matriculants, for it is based only on those who showed active enrollment for credit at the END

Table 1

**Four Semester Follow-up of Persistence
Fall, 1989 Matriculants**

Semester	N	Withdrawals	% of Original
Fall, 1989	271		
Spring, 1990	178	93	34.32%
Fall, 1990	108	70	25.83%
Spring, 1991	102	6	2.21%
Total		169	62.36%

Selected Characteristics

	F 1989	S 1990	F 1990	S 1991
Number	271	178	108	102
Mean Units Attempted	8.655	8.500	9.590	8.254
Mean Units Completed	7.515	7.730	8.860	7.422
Zero Attempted Units	40	25	13	14
GPA ALL	1.97	2.07	2.35	2.08
GPA Non-ZAUS	2.31	2.41	2.67	2.41
	(=241)	(N=153)	(N=95)	(N=88)

of each semester. On the basis of these data, overall persistence was 36.5% over the four-semester follow-up period.

Tables 2 through 4 present sequential data for ALL students enrolled each semester. The detail of Table 2 has been previously reported and is not included here. For each of the other semesters, charts of Units Attempted, Units Completed and Grade Point Average Distribution are shown. As it turns out, the majority of Matriculant were actually in part-time status during each of the four semesters of enrollment, being enrolled in an average of less than nine (9) units each semester. This again suggests that further attainment of degree and/or certificate goals may occur in the fifth or sixth semester as these students continue in enrollment. Slightly over a third of all students were on Academic Probation status at the end of each semester, while just slightly more than that were in the 3.00-4.00 range.

A second pass at the same progression data is shown in Tables 5 - 7, which include the performance and persistence of those who were not shown in ZAUS status - that is, they had active units attempted through each of the semesters discreetly shown. Of these, over 40% were taking at least 12 units each semester. Naturally, GPA distributions were higher for these groups, as the Zero GPAs were also removed from consideration for those who showed Zero Attempted Units. Semester by semester, about 70% of all students continued to make satisfactory academic progress. The most successful semester appeared to be the Fall of the second year, when the students attained an aggregate GPA of 2.67.

Contrasts Between Persisters and Withdrawals

Those students enrolling for the first time in any college (N=204) were selected for particular attention in follow-up. In order to establish the greatest contrast of persistence, two (2) contrasting groups were set up: 1) Those students who showed continuous enrollment for all four semesters of the study (N=63) and 2) those students who withdrew within or at the end of their first semester and did not ever enroll at Mendocino College again during the follow-up period (N=64).

Contrasts between the two (2) groups were drawn for a number of Demographic and Academic characteristics, including Sex, Race, Goal, Participation in College Orientation Class, and Computerized Placement Test (CPT) Results for each of the four (4) measures.

Table 8 shows that gender is associated with persistence. Significantly, women tend to persist at Mendocino College in greater percentages than their male peers. As Table 9 and 10 indicate, no significant differences were found to be associated with either Racial-Ethnic status or stated Goal for college when Persisters were compared with Withdrawals. Because of small sample sizes, all Minority students were aggregated into a single category. In fact, the detailed analysis of these data suggest a slight but non-significant association between persistence and Ethnicity among Black and Hispanic students.

Previous research had suggested an association between participation in the Orientation Class and subsequent persistence and performance. Those who take the class appear to be the ones who out perform and out persist their peers across the board. Further analysis of this issue is shown below. However, Table 11 indicates that Orientation turns out to be the most potent

Table 2

Second Semester Performance: Fall, 1989 Matriculants
in Spring, 1990 Semester
(All Continuing Matriculants)
(N = 178)

Units Attempted S'90	Mean:	8.50	SD= .55
Units Completed S'90	Mean:	7.73	SD= .77
Number of ZAUS Students:		25	
Grade Point Average, All	Mean:	2.069	SD=1.38

Distribution of Units Attempted (All Continuing)

	N	%
0 - <6	55	30.90%
6 - <12	54	30.34%
12 - <18	64	35.95%
18 +	5	2.81%

Distribution of Units Completed (All Continuing)

	N	%
0 - <6	69	38.76%
6 - <12	49	27.53%
12 - <18	55	30.90%
18 +	5	2.81%

Distribution of GPA (All Continuing)

	N	%
0 - <1.000	47	24.40%
1.000-<2.000	19	10.67%
2.000-<3.000	50	28.09%
3.000-<4.000	54	30.34%
4.000	8	4.49%

Table 3

Third Semester Performance: Fall, 1989 Matriculants
in Fall, 1990 Semester
(All Continuing Matriculants)
(N=108)

Units Attempted F'90	Mean:	9.59	SD=5.21
Units Completed F'90	Mean:	8.86	SD=5.46
Number of ZAUS Students:		13	
Grade Point Average, All	Mean:	2.352	

Distribution of Units Attempted (All Continuing)

	N	%
0 - <6	23	21.30%
6 - <12	38	35.19%
12 - <18	43	39.81%
18 +	4	3.70%

Distribution of Units Completed (All Continuing)

	N	%
0 - <6	33	30.56%
6 - <12	31	28.70%
12 - <18	41	37.96%
18 +	3	2.78%

Distribution of GPA (All Continuing)

	N	%
0 - <1.000	18	16.67%
1.000-<2.000	12	11.11%
2.000-<3.000	35	32.41%
3.000-<4.000	33	30.56%
4.000	10	9.25%

Table 4

Fourth Semester Performance: Fall, 1989 Matriculants
in Spring, 1991 Semester
(All Continuing Matriculants)
(N=102)

Units Attempted S'91	Mean:	8.254	SD=5.655
Units Completed S'91	Mean:	7.422	SD= 5.823
Number of ZAUS Students:		25	
Grade Point Average, All	Mean:	2.080	SD=1.32

Distribution of Units Attempted (All Continuing)

	N	%
0 - <6	34	33.33%
6 - <12	28	27.45%
12 - <18	36	35.29%
18 +	4	3.92%

Distribution of Units Completed (All Continuing)

	N	%
0 - <6	43	42.16%
6 - <12	24	23.53%
12 - <18	32	31.37%
18 +	3	2.94%

Distribution of GPA (All Continuing)

	N	%
0 - <1.000	28	27.45%
1.000-<2.000	6	5.88%
2.000-<3.000	32	31.37%
3.000-<4.000	33	32.35%
4.000	3	2.94%

Table 5

Second Semester Performance: Fall, 1989 Matriculants
in Spring, 1990 Semester
Non-ZAUS Only
(N=153)

Units Attempted S'90	Mean:	9.89	SD= 4.75
Units Completed S'90	Mean:	8.96	SD= 5.59
Number of ZAUS Students: (Excluded)		25	
Grade Point Average, Non-ZAUS	Mean:	2.41	SD= 1.18

Distribution of Units Attempted (All Continuing)

	N	%
0 - <6	30	19.61%
6 - <12	54	35.29%
12 - <18	64	41.83%
18 +	5	3.27%

Distribution of Units Completed (All Continuing)

	N	%
0 - <6	44	28.76%
6 - <12	49	32.03%
12 - <18	55	35.95%
18 +	5	3.27%

Distribution of GPA (All Non-ZAUS)

	N	%
0 - <1.000	22	14.38%
1.000-<2.000	19	12.42%
2.000-<3.000	50	32.68%
3.000-<4.000	54	35.29%
4.000	8	5.23%

Table 6

Third Semester Performance: Fall, 1989 Matriculants
in Fall, 1990 Semester
Non-ZAUS Only
(N=95)

Units Attempted F'90	Mean:	10.90	SD=4.06
Units Completed F'90	Mean:	10.04	SD=4.71
Number of ZAUS Students: (Excluded)		13	
Grade Point Average, Non-ZAUS	Mean:	2.674	SD=.974

Distribution of Units Attempted (All Continuing Non-ZAUS)

	N	%
0 - <6	10	10.53%
6 - <12	38	40.00%
12 - <18	43	45.26%
18 +	4	4.21%

Distribution of Units Completed (All Continuing Non-ZAUS)

	N	%
0 - <6	20	21.05%
6 - <12	31	32.63%
12 - <18	41	43.16%
18 +	3	3.16%

Distribution of GPA (All Continuing Non-ZAUS)

	N	%
0 - <1.000	5	5.26%
1.000-<2.000	12	12.63%
2.000-<3.000	35	36.84%
3.000-<4.000	33	34.74%
4.000	10	10.53%

Table 7

Fourth Semester Performance: Fall, 1989 Matriculants
in Spring, 1991 Semester
Non-ZAUS Only
(N = 88)

Units Attempted F'90	Mean: 9.568	SD=4.942
Units Completed F'90	Mean: 8.585	SD=5.424
Number of ZAUS Students: (Excluded)	14	
Grade Point Average, Non-ZAUS	Mean: 2.411	SD=1.105

Distribution of Units Attempted (All Continuing Non-ZAUS)

	N	%
0 - <6	20	22.73%
6 - <12	28	31.82%
12 - <18	36	40.90%
18 +	4	4.55%

Distribution of Units Completed (All Continuing Non-ZAUS)

	N	%
0 - <6	29	32.95%
6 - <12	24	27.27%
12 - <18	32	36.36%
18 +	6	3.41%

Distribution of GPA (All Continuing Non-ZAUS)

	N	%
0 - <1.000	14	15.91%
1.000 - <2.000	6	6.82%
2.000 - <3.000	32	36.36%
3.000 - <4.000	33	37.50%
4.000	3	3.41%

predictor of persistence. The Phi Coefficient, a measure of association between two (2) categorical variables, is .33, and is also statistically significant.

The final contrast between Persisters and Withdrawals is shown in Table 12 for CPT scores on each of the four (4) measures. In Fall, 1989, Mendocino College had just adopted the CPT and initiated the formal follow-up of Matriculants. Thus, the numbers of those showing test results were small than should be expected and will be found in subsequent semesters of Matriculation research. However, the data shown indicate a very consistent pattern of statistically significantly lower academic achievement for Withdrawals. The differences were especially significant for Arithmetic and Algebra. Other research at Mendocino College has shown that the Mathematics portions of the CPT show contrasts based on Sex (Females lower) and on Race (Minorities lower). Among the several tests, Arithmetic appears to be the best indicator of potential for persistence, as will be shown below.

Appendix 2 of this report shows the fields of attainment for each of the 16 Graduates of Mendocino College during the 190-1991 academic year. These students represent just under 20% of the 88 students remaining in attendance for four semesters, and 6.7% of the 241 students who completed their first semester at Mendocino College in Fall, 1989. Again, those who transferred have not been follow up specifically, so no data are available on which to assess the attainment of this objective.

Developing A Predictive Model: Preliminary Analyses:

Based on the four-semester follow-up of Fall, 1989 Matriculants, some preliminary explorations were made of possible associations between various data elements and the course of a college career for Mariculants at Mendocino College.

First, some Regression analysis was conducted to discover the strength of association between selected variables and persistence. Again, data were limited as not all students included among Persisters and Withdrawals took the CPT tests. A first pass was made with Arithmetic only as an independent variable. As Table 13 indicates, the correlation between the Arithmetic Test Score and Persistence was .216. For a correlation with 41 Degrees of Freedom, the critical value for significance is approximately .304. By itself, Arithmetic Score did not correlate with Persistence/Withdrawal. Reading Comprehension showed a correlation of .154 for 45 students, and was not included in the subsequent analyses.

Several sequential steps were taken toward developing a Multiple Regression Equation that might be used for prediction of student performance at Mendocino College. To the Arithmetic Score was added Participation in the Orientation Class. With these two (2) variables in the equation, the Multiple Correlation increased from .216 to .305. When Gender was considered, the Multiple Correlation was increased to .44, and the three element Analysis of Variance showed an F-Test value of 3.045, ($p < .05$). Finally, Minority status was included, which increased the Multiple Correlation to .495 ($F=3.005$; $p < .03$).

A second analysis was made using a Factor Analytical Model of the Analysis of Variance. The key question of such an analysis is which Factors significantly contribute to an explanation of the variability of the measured phenomenon under investigation (Persistence). Factor analysis is

Table 8

Patterns of Contrast:

Sex

Fall 1989 First Time Matriculant Students

Persisters versus Withdrawals

(N=127)

Sex			
	Male	Female	
Persist	26	37	63
Withdraw	37	27	64
Total	63	64	127
CHI SQUARE:	4.197	p. < .05	
PHI:	0.18		

Table 9

Patterns of Contrast:

Race

Fall 1989 First Time Matriculant Students

Persisters versus Withdrawals

(N=127)

	Cau. Non-Minority	All Minority	
Persist	47	16	63
Withdraw	54	10	64
Total	101	26	127
Chi-Square:	0.691	N.S.	
PHI:	0.073		

Table 10

Patterns of Contrast:
 Goal at Entry
 Fall 1989 First Time Matriculant Students
 Persisters versus Withdrawals
 (N=127)

	Transfer (1,2)	Other	Total
Persist	48	15	63
Withdraw	46	18	64
Total	94	33	127
Chi-Square:	0.322	N.S.	
PHI:	0.05		

Table 11

Patterns of Contrast:
Took Orientation Class
Fall 1989 First Time Matriculant Students
Persisters versus Withdrawals
(N=127)

	Yes	No	Total
Persist	33	30	63
Withdraw	16	48	64
Total	49	78	127
Chi-Square:	13.97	p. < .001	
PHI:	0.332		

Table 12

Patterns of Contrast:
CPT Test Scores
Fall 1989 First Time Matriculant Students
Persisters versus Withdrawals

Test	N	Mean	Std. Dev.	Difference	T-Value	Significance
Rd. Comp.						
Persist	18	80.44	18.59			
Withdraw	27	73.59	24.09	6.85	3.528	p. < .01
Sen.Skills						
Persist	17	83.94	24.08			
Withdraw	27	76.07	26.95	7.87	3.254	p. < .01
Arith.						
Persist	16	74.50	31.09			
Withdraw	26	61.23	28.99	13.27	4.337	p. < .001
Algebra						
Persist	12	72.42	9.15			
Withdraw	12	50.58	30.67	21.84	5.79	p. < .001

based on the use of Categorical Elements (Factors) as independent variables. To accomplish this, Arithmetic Scores were assigned as High, Mid or Low according to local normative data, assigning each group by thirds (Highest third was "High," etc.). Minority status was either Minority or Non-Minority; Sex was Male or Female; Orientation was Participant or Non-Participant. An initial analysis indicated that Minority status did not significantly contributed to the model, so a final Three-Factor Analysis of Variance was developed using Arithmetic, Sex, and Orientation as the independent variables. These results are shown in Table 14. As shown, the Model strongly suggests a combination of variables to be effective. Taken by themselves, none of the three (3) variables showed a significant partial F-Value. But when all three were considered together, the F-Value was significant at $p < .02$. Multiple Correlation for the Model was .677, which accounted for over 28% of the variance in student persistence, as estimated by the Adjusted R-Squared. The overall Model was significant at $p < .01$ ($F=2.621$ with 10 DF for the Model; 41 DF Total).

Discussion:

A four-semester follow-up was conducted for Fall, 1989 Matriculants at Mendocino College. Overall, it was found that about 37% persisted through the four semester period, and about 6.7% attained Degrees or Certificates at that point. These data are in general consisted with what has been reported earlier by Dr. M. Stephen Sheldon in the **Statewide Longitudinal Study** conducted in the 1970s, and by Dr. Dorothy Knoell's report for the California Postsecondary Education Commission a few years earlier.

For local response, the most important issue appears to be how to encourage persistence into the second year at Mendocino College. Early recognition of High Risk Students is critical for planning and implementing appropriate interventions of all kinds. The data strongly confirm that the College Orientation Class is the single most potent predictor of student persistence. Those who enroll in Orientation tend to be those who remain at Mendocino College to attain personal objectives. A second consideration is academic potential. The data suggest that the level of the Arithmetic Score is the best single CPT index of potential for student persistence. Other studies have suggested that it is also the most useful score for predicting overall student performance (GPA), as well as specific student performance in selected classes. Finally, it is clear from the data that Gender is associated with persistence: Males tend to be at higher risk of attrition than Females. Previous research has shown that Low Ability Males are especially at high risk, perhaps because of the limited number of degree or certificate options available to such male students in postsecondary education.

A plan that would provide the immediate and continuing support for College Counselors, Faculty Members, and The Learning Center Staff appears to be the key to encouraging High Risk students to remain. Clearly, those who do not achieve academically will eventually withdraw, so the focus must be on increasing academic performance each semester and in each class. The PASS program, supportive of Student Athletes, has shown some success among those who are early identified as at High Risk, and perhaps the same philosophy of special targeted identification could be beneficial for other selected groups, such as Vocational Students.

Table 13

Multiple Regression Analysis of Persistence
(Four Variables)

Variables: (Cumulative)	Multiple R	Added Value	Significance
Arithmetic	0.216		N.S.
Orientation	0.305	0.089	p. < .05
Sex	0.440	0.224	p. < .05
Minority	0.495	0.279	p. < .05

F-Value for 4 Variable Analysis of Variance = 3.005; p. < .05

Table 14

Three Factor Analysis of Variance

Source:	df	Sum Sq	Mn Sq	F-Value	p. - Value
Arith Level	2	0.288	0.114	0.658	0.525
Sex	1	0.376	0.376	2.174	0.1504
Orient?	1	0.215	0.215	1.243	0.2734
Ar x Sex	2	1.464	0.732	4.228	0.0238
Ar x Or?	2	0.637	0.319	1.84	0.1757
Sex x Or?	1	0.554	0.554	3.201	0.0834
Ar x Sex x Or?	1	1.031	1.031	5.953	0.0206
Residual	31	5.367	0.173		

Model Summary:

N	42
R	0.677
R-squared	0.458
Adj. R-Squared	0.283
RMS Resid.	0.416

Model:

DF	10
Total DF	41
F-Value	2.621
p. <	0.0194

APPENDIX 1

**SUPPLEMENTAL TABLES FOR EACH SEMESTER
FALL 1989 - SPRING 1991**

Table A1

Sex of Fall 1989 Matriculants

	N	%
Male	137	50.55%
Female	134	49.45%
Total	271	100.00%

Table A2

**Sex of Fall Continuing Matriculants
Fall 1989 in Spring 1990**

	N	%
Male	87	48.88%
Female	91	51.12%
Total	178	100.00%

Table A3

**Sex of Fall Continuing Matriculants
Fall 1989 in Fall 1990**

	N	%
Male	51	47.22%
Female	57	52.78%
Total	108	100.00%

Table A4

**Sex of Fall Continuing Matriculants
Fall 1989 in Spring 1991**

	N	%
Male	46	45.10%
Female	56	54.90%
Total	102	100.00%

Table A5
Fall 1989
Age Distribution of Matriculants at En

Age Range	Number	Percent
Under 18	9	3.32%
18-19	148	54.61%
20-24	58	21.40%
25-29	17	6.27%
30-34	12	4.43%
35-39	15	5.54%
40-44	7	2.58%
45-49	2	0.74%
50 +	3	1.11%
	271	100.00%

Table A6

Age Distribution of Continuing Matricu
Fall 1989 In Spring 1990

Age Range	Number	Percent
Under 18	6	3.37%
18-19	106	59.55%
20-24	34	19.10%
25-29	7	3.93%
30-34	7	3.93%
35-39	12	6.74%
40-44	3	1.69%
45-49	1	0.56%
50 +	2	1.12%
	178	100.00%

Table A7

Age Distribution of Continuing Matricu
Fall 1989 In Fall 1990

Age Range	Number	Percent
Under 18	2	1.85%
18-19	59	54.63%
20-24	23	21.30%
25-29	5	4.63%
30-34	4	3.70%
35-39	8	7.41%
40-44	4	3.70%
45-49	1	0.93%
50 +	2	1.85%
	108	100.00%

Table A8

**Age Distribution of Continuing Matricu
Fall 1989 in Spring 1991**

Age Range	Number	Percent
Under 18	2	1.96%
18-19	59	57.84%
20-24	20	19.61%
25-29	4	3.92%
30-34	4	3.92%
35-39	8	7.84%
40-44	3	2.94%
45-49	1	0.98%
50 +	1	0.98%
	102	100.00%

Table A9
Fall 1989
Racial-Ethnic Distribution of Matriculants

Category	Number	Percent
White, Non-Hisp.	210	77.49%
Asian	5	1.85%
Black, Non-Hisp.	13	4.80%
Mexican American	22	8.12%
Native American	12	4.43%
Other Non-White	4	1.48%
Pacific Islander	3	1.11%
Filipino	2	0.74%
Total:	271	100.00%

Table A10
Fall 1989 in Spring 1990
Racial-Ethnic Distribution of Matriculants

Category	Number	Percent
White, Non-Hisp.	135	75.84%
Asian	3	1.69%
Black, Non-Hisp.	11	6.18%
Mexican American	16	8.99%
Native American	7	3.93%
Other Non-White	3	1.69%
Pacific Islander	2	1.12%
Filipino	1	0.56%
Total:	178	100.00%

Table A11
Fall 1989 in Fall 1990
Racial-Ethnic Distribution of Matriculants

Category	Number	Percent
White, Non-Hisp.	78	72.22%
Asian	2	1.85%
Black, Non-Hisp.	9	8.33%
Mexican American	13	12.04%
Native American	3	2.78%
Other Non-White	1	0.93%
Pacific Islander	1	0.93%
Filipino	1	0.93%
Total:	108	100.00%

Table A12
Fall 1989 In Spring 1991
Racial-Ethnic Distribution of Matriculants

Category	Number	Percent
White, Non-Hisp.	76	74.51%
Asian	2	1.96%
Black, Non-Hisp.	8	7.84%
Mexican American	11	10.78%
Native American	3	2.94%
Other Non-White	0	0.00%
Pacific Islander	1	0.98%
Filipino	1	0.98%
Total:	102	100.00%

Table A 13

Goals of Fall 1989 Matriculants

Category	Number	Percent
AA/AS Transfer	164	60.52%
Transfer - No Degree	38	14.02%
AA/AS Vocational	35	12.92%
AA/AS General	16	5.90%
Certificate	18	6.64%
Other	0	0.00%
Total	271	100.00%

Table A 14

**Goals of Fall 1989 Matriculants
Fall 1989 In Spring 1990**

Category	Number	Percent
AA/AS Transfer	112	62.92%
Transfer - No Degree	21	11.80%
AA/AS Vocational	18	10.11%
AA/AS General	13	7.30%
Certificate	14	7.87%
Other	0	0.00%
Total	178	100.00%

Table A 15

**Goals of Matriculants
Fall 1989 in Fall 1990**

Category	Number	Percent
AA/AS Transfer	66	61.11%
Transfer - No Degree	13	12.04%
AA/AS Vocational	14	12.96%
AA/AS General	6	5.56%
Certificate	7	6.48%
Other	2	
Total	108	100.00%

Table A 16

**Goals of Fall 1989 Matriculants
Fall 1989 In Spring 1991**

Category	Number	Percent
AA/AS Transfer	60	58.82%
Transfer - No Degree	12	11.76%
AA/AS Vocational	13	12.75%
AA/AS General	6	5.88%
Certificate	7	6.86%
Other	4	3.92%
Total	102	100.00%

APPENDIX 2

**FALL, 1989 MATRICULANTS
GRADUATING IN 1990-91 ACADEMIC YEAR**

GRADUATES OF FALL, 1989 MATRICULATING CLASS

GRADUATION YEAR 1991 = 16

Patricia Arteaga-Torres

Certificate of Achievement

Secretarial Science: General Office

Certificate of Achievement

Secretarial Science: Machine Transcription

Certificate of Achievement

Secretarial Science: Legal

Certificate of Achievement

Secretarial Science: Shorthand

Linda Ann Burke

Certificate of Achievement

Business: Accounting

Katherine Michelle Crabtree*

Associate in Arts

Liberal Arts

Zachary J. Davis

Associate in Science

Administration of Justice

James J. Gray

Certificate of Achievement

Welding

Richard P. Ibarra

Associate in Arts

General Studies

Kimberly Marie Irwin*

Associate in Arts

General Studies

Dana Raylene Milani

Associate in Arts

Liberal Arts

Kari Kathryn Nunnemaker*

Associate in Arts

Liberal Arts

Associate in Arts

General Studies

Rand-Jay Peaslee, Jr.
Associate in Arts
General Studies

Sonia Soriano
Associate in Arts
General Studies

Arturo Castaneda*
Associate in Arts
General Studies

Toby Lee Hoy
Associate in Arts
General Studies

Darren Kondash
Associate in Arts
General Studies

Donald Lee Sanders
Associate in Science
Computer & Information Sciences

Caitilin Skeffington-Flynn**
Associate in Science
Administrative Secretary
Certificate of Achievement
Secretarial Science: Shorthand
Certificate of Achievement
Secretarial Science: Word Processing Specialist